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ABSTRACT

The Detroit Tests of Learning Aptitude, 3rd Edition (DLTA-3) is a battery of 11 subtests that measure different but interrelated mental abilities. These are clinically assessed by the battery, which further attempts to delineate the factors that contribute to Spearman's factor for general intelligence. The DLTA-3 has age norms expressed for test takers ranging from 6 years, 11 months to 17 years, 11 months in terms of scaled score units. With respect to different target groups (Blacks, Whites, Hispanics) group information is provided only in the form of reliability coefficients. The DLTA-3 appears to be relatively unbiased with respect to reading measurement. Testing of verbal aptitude is tailored in terms of concepts most children would know. The analysis attempts to differentiate higher and lower levels of processing among students on several important theoretical dimensions of intellectual development. The motoric subtests have been revised since the DLTA-2, contributing to the fact that DLTA-3 is a good test for measuring intraindividual information processing differences because of its high internal consistency. (Contains 5 references.) (SLD)

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A Review of the Detroit Tests of Learning Aptitude - 3 (DTLA-3)

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Title: Detroit Tests of Learning Aptitude (3rd Edition)
Authors: Donald D. Hammill
Publisher: Pro-Ed
Date of publication: 1991
Date of most recent norming samples: 1990
Time required to administer: Approximately 1 1/2 - 2 hours
Selected costs in total: (as of 10/31/94):

* **DTLA-3 Complete Kit**---$198.00

What the kit consists of: DTLA-3 Examiner's Manual (#5166); DTLA-3 Picture Book for Design Sequences, Story Construction, Design Reproduction, Symbolic Relations (#5167); DTLA-3 Picture Book for Story Sequences (#5168), #25 of DTLA-3 Profile/Summary Forms (#5169); #25 of Examiner Record Booklets (#5170); #25 of DTLA-3 Response Forms (#5171); DTLA-3 Picture Fragments Flipbook (#5172); DTLA-3 Story Sequence Chips, Design Sequence Cubes (#5173);

* **DTLA-3 Optional Items**
DTLA-3 Apple Software Scoring System (#5174); or
DTLA-3 IBM Software Scoring System (#5175)

Description of Purpose and Nature of Test

The Detroit Tests of Learning Aptitude, 3rd Edition (DTLA-3) is a battery of 11 subtests that measure different but interrelated mental abilities. These specific abilities or aptitudes (Hammill, 1991) are assessed clinically in this test battery which attempts to further delineate the individual factors that contribute to Spearman's g factor for general intelligence. That is a significant undertaking because aside from Kaufman's recent efforts to give indicators for

intraindividual differences with his interpretation of the WISC-R (1974), the Detroit Tests, beginning from 1935 (1st Edition), has always attempted to do this. The assessment of intraindividual differences in learning aptitude has been a major focus of the DTLA since 1935 when the test was constructed by Leland & Baker, and then with the DTLA-2 (1985), and the DTLA-3 (1991). Subsequently, Hammill (1991) has successfully addressed many prior concerns about the DTLA's standardization, reliability, validity, and the contemporary nature of its materials.

The DTLA-3 is an individually-administered test battery of specific abilities along with general overall intelligence. As such, it is a multiple aptitude battery assessing intelligence from empirically confirmed criteria. Based on a discrepancy of 20 or more points between one or more substandard scale scores, significant intraindividual differences with respect to a Domain Composite Area may indicate a learning disability.

The DTLA-3 consists of 11 subtests that measure overall intellectual ability (Spearman's g) and moreover, specific cognitive aptitudes. Each subtest can be represented on a continuum of knowledge and ability with respect to one or more clusters of factors: Verbal vs. Nonverbal scales (derived from Wechsler's scales, 1974; 1981; 1989), Simultaneous vs. Successive Processing (derived from Das, 1972), Fluid vs. Crystallized Intelligence (derived from Horn & Cattell's divisions of intellect, 1966), and Associative vs. Cognitive levels (derived from

Jensen's divisions of information-processing levels). In the manual, it is mentioned that the examiner has the option of constructing an Optimal Composite, which would be based on the four largest subtest standard scores achieved in any of the subtests. The Optimal Composite can then be employed as an estimate of the testee's General Mental Ability, which is derived from the sum of the scaled scores of all eleven subtests.

The DTLA-3 has age norms expressed for testtakers ranging from 6 years, and 11 months to 17 years and 11 months, starting with every fifth month, in terms of scaled score units. However, with respect to different target groups such as Blacks, Whites, and Hispanics or males and females, separate group information is provided only in the form of reliability coefficients. Hammill (1991) provided satisfactory data that with respect to ethnicity, sex, and geographic location of residence across all age groups, the standardization sample had equivalent representation.

Throughout this test, testtakers are asked to provide their own answers in the form of written, visual, motoric or auditory output, with the exception of Design Sequences, which is in a forced choice format requiring the testtaker to produce a gestural or motoric output. Bryant (1991) developed the DTLA-3 Software Scoring and Report System for the Apple IIe, IIc, IIGS, and for IBM PC's. There are two levels of information that can be obtained from it. If the examiner wants to take it beyond merely the descriptive level, he or she can use decision

rules about the presence of intraindividual differences with respect to subtests and Domain Composites. Also, all information at descriptive and decision levels can be printed and be manually filed with other written information about a testtaker.

Practical Evaluation

The DTLA-3 Examiner's Manual seems to possess the same easy-to-read format that was characteristic of the DTLA-2. Instructions in the Manual, the various Picture Books and Examiner Record or Examinee Response Forms are done in shades of black and white with a purple tint to some headings. The set of seven dice cubes, which are used for the Design Sequences subtest, and the set of numbered squares, used for Symbolic Relations are simple for the examinee to use if they are given proper instructions.

The DTLA-3 should take 1 1/2 to 2 hours to give in total, and is too lengthy to give to younger children without a break. Most instructions are simple to follow, though some of the Nonverbal subtests may require some earlier practice from the Examiner.

The materials comprising the DTLA-3, including the various Picture Books, a Flipbook, and dice cubes for Design Sequences, and square number pegs for Design Reproduction, are very durable. The Picture Books and Flipbooks are made of hard, thick cardboard in bold shadings of black and white. Though the age norms for the test go up to 17 years, 11 months, the materials used in this test are

more suitable for children from age six through to about 14 years. Some of the non-verbal items in the Picture Books and Flipbook have pictorial themes depicting various activities involving socialization with family, friends, and the surrounding community (eg. a barbershop) which may be too simple or overlearned for late adolescents or adults.

The educational level of the examiner isn't as important as the level of practice needed to efficiently present the non-verbal items on this test. The administration of the verbal items on the DTLA-3 is very straightforward. Interpretation of this test; however, should be done by someone with advanced training in education or psychology.

Item presentation and administration is straightforward though requiring practice particularly in reading for and following through the instructions given orally to the testtaker. Ample prompting is provided for the examiner in the Test Administration Manual and also, for the Examiner Record Booklet, where the testtaker's responses are recorded. The DTLA-3 appears to measure attributes of verbal and nonverbal intellectual aptitude in a straightforward way, sharing facets with that of several other tests of learning aptitude and intelligence such as the Tests of Nonverbal Intelligence (TONI-2), and the WISC-R. It retains 7 of the 11 subtests of the DTLA-2 and adds Basic Information, Picture Fragments, Story Sequences, and Design Sequences. Story Construction was reconstructed from the

DTLA-2 to include more action and a more realistic depiction of the activities of grade-school children. It appears that the non-verbal Picture Book and Flipbook items have been constructed by Hammill (1991) to maintain and enhance the attention and interest of young testtakers. This test should not be considered too long if used as a diagnostic aptitude battery, but is lengthy if intended solely for use as a screening device for students suspected of having a learning disability.

All of the Verbal subtests have basal and ceiling levels. Most non-verbal items have no basal or ceiling levels, with the exception of Symbolic Relations and Picture Fragments. This use of basal and ceiling level adds to the time of administration.

Technical Evaluation

The DTLA-3 was standardized on 2,587 examinees residing in 36 states. Hammill (1991) reports that the standardization sample was representative of the national population with respect to gender, area of residence (city or rural), race, geographic area, and ethnic background. Trained examiners were sent out to four major regional areas to conduct testing.

Subtest scores are convertible to stanines for all subtests (M=5, SD=2) though a standard score format for any particular subtest is recorded (range from 1 to 20, M=10, SD=3). Individual Domain-Composites, the General Mental Ability composite, and the

Overall Ability Domain-Composite scores have the characteristic standardized distribution (M=100, SD=15) of IQ scores. No score norms are reported for different groups of testtakers; however, age norms were established in five month increments in a table in the back of the Examiner's Manual. These norms begin with six years to six years, 6 months and end with 17 years, 6 months to 17 years, 11 months.

The DTLA-3 has internal consistency and stability reliability coefficients mostly in the 80's and 90's with respect to its subtests and its Composite standard scores. The Cronbach alpha level for 34% of the subtests is at or above .90, whereas 86% of the subtests have a Cronbach alpha level above .80. It also has a standard error of measurement rarely going above 4 Domain Composite Score points across any age levels. The DTLA-3 overall has a high degree of test reliability, both in terms of internal consistency and test-retest reliability.

The DTLA-3 was also found to have moderate criterion validity with all the WISC-R intelligences scales, and with the Woodcock-Johnson Psycho-educational Battery and the Scholastic Aptitude Scale, which are achievement-based measures. Its median validity coefficient, with respect to 1,161 coefficients representing its subtests, is comparable to the DTLA-Primary, the Kaufman Assessment Battery for Children (K-ABC), and the Woodcock-Johnson Psycho-educational Battery-Revised at .64.

The DTLA-3 demonstrates good construct validity of its subtests with four major Factor Analytic theories of intelligence. Factors generated by the Promax rotation method include Sequential Memory for Words, General Visual Intelligence, Conceptual Verbal Ability, and Residual (difficult-to-interpret). These factors underlie the general factor of General Mental Ability.

With respect to content validity, groups of its subtests differentially match the characteristics required for conceptualizing intelligence in terms of four major Domain Composite areas. Note that when a set of subtests has been placed in a Domain Composite Category, the score that is derived from that is synonymous to an IQ Scale for that particular processing factor. Hammill (1991) recommends that test administration should not make comparisons between different Domain-Composite areas because of considerable overlap among subtests within any particular Domain-Composite.

Summary Evaluation

Having worked extensively with the reading-related measures of the DTLA-2, I perceive that the DTLA-3 continues to be a relatively unbiased measure in this area. It tailors its testing of verbal aptitude in terms of concepts that most children would know developmentally, and attempts to refine its analysis for differentiating between higher and lower levels of processing among students on several important theoretical dimensions of intellectual

development. These levels of processing are ultimately neurologically-based, but what makes them useful here is that one can observe the interaction of the child's intellectual capacity with their background knowledge and do so in a variety of controlled intellectual contexts.

The performance or motoric subtests of the DTLA-3 have been substantially revamped since the DTLA-2. On the DTLA-2, the Oral Directions subtest was the source of many complaints by examiners because of its lack of intercorrelation with other measures in the test, and because of the complexity of its instructions for children. That test was eliminated from the DTLA-3, and it appears that its replacement, Symbolic Relations, is concrete enough for children to begin following at any developmental level. I also believe its ceiling with respect to attention and concentration will be higher than what would be observed under Oral Directions.

Psychometrically, the DTLA-3 is a good test for measuring intraindividual information processing differences because of its high internal consistency among Domain Composite Scale content areas. Furthermore, one can take this "processing" measure and attempt to link it with commonly used IQ tests and achievement measures to supplement those measures with a specific test of intraindividual intellectual abilities and aptitudes.

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